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APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re:

Serial #: 09/756,688
For: Removable Bearing Assemblies
Filed: January 9, 2001
Inventor: Richard L. Fisher
GAU: 3617
Examiner: Avila
Docket #: Fisher-001221

APPEAL TO THE BOARD OF APPEALS

In reply to the "Notification of Non-Compliant Appeal Brief," mailed December 27, 2005, Appellant and his representative respectfully submit the present appeal brief to the Board of Patent Appeals and Interferences for relief from the Examiner's decision dated June 14, 2005 finally rejecting claims 40-42, 44-46, 48, 49, 51 and 52. In view of appeal fees having been paid once already for this application, and in accord with 35 U.S.C. 134(a), there should be no additional fees required for this notice. Nevertheless, if there are fees required, please charge all fees to deposit account 17-0155.

1. REAL PARTY IN INTEREST

The present patent application is owned by the above named inventor.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals. Appellant has filed a petition to the Director to invoke supervisory authority to institute an interference regarding the allowed and objected claims copied from the Foreman published application 2001/0041482 which matured without amendment into U.S. patent 6,361,388 B2.

3. STATUS OF CLAIMS

Claims 21, 23, 25, 26, 28 - 31, 39 - 52, 73 and 74 are pending. Claims 21, 23, 25, 26, 28 - 31, 39, 73 and 74 stand allowed. Claims 43, 47 and 50 stand objected to. Claims 40-42, 44-46, 48, 49, 51 and 52 stand rejected.

4. STATUS OF AMENDMENTS

No amendments are pending. An after-final request for reconsideration of the decision denying institution of an interference was filed on September 14, 2005. The final decision of the Examiner denying the interference was mailed December 22, 2005. A petition has been filed requesting the Director to invoke supervisory authority regarding the interference prior to the

filing this brief.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The Invention, Generally

This invention pertains generally to the field of marine propulsion systems, and more specifically to marine propulsion systems utilizing an elongated propeller drive shaft having a housing surrounding the propeller shaft. Boats of this industry are commonly referred to as mud boats, since these boats are designed for traversing shallow waters, swamps, and other muddy waters (specification pg. 2, lines 16 - 18). The present invention combines a removable bearing (200, fig 1), propulsion motor (110, fig 1), elongate propeller shaft (130, fig 1), and an elongate casing surrounding the elongate shaft (140, fig. 1). The combination enables, for the first time in the mud boating industry, the use of serviceable ball bearings that are streamlined with the casing, and replaces the industry standard bushings of the prior art.

Exemplary Allowed Claim 21

A drive assembly for a marine mud motor (100 in fig 1, pg 2, lines 12-18) comprising:

- a) an elongate drive tube (140, fig 1), configured for rotatably receiving a drive shaft (130, fig 1) therethrough, wherein a lower end of the drive tube includes;
- b) a drive assembly housing (200, fig 1), having a lower end;
- c) a bearing (260 - 264, fig 2), in rotational communication between the drive assembly housing and the drive shaft (page 10, lines 12 - 13); and
- d) a seal (230, 235, fig 2), contained within the drive assembly housing, configured to

restrict contaminants from entering the drive assembly housing (page 9, last line - page 10, first line).

Exemplary Allowed Claim 26

A drive assembly for a marine mud motor (100 in fig 1, pg 2, lines 12-18), comprising:

- a) an elongate drive tube (140, fig 1) having an inside, an outside and a lower end, configured for rotatably receiving a drive shaft (130, fig 1) therethrough, wherein the lower end of the drive tube includes;
- b) an enlarged drive assembly housing (200, fig 1) having an inside, an outside, an upper end and a lower end, wherein the inside diameter of the enlarged assembly housing is larger than the inside diameter of the elongate drive tube;
- c) a bearing (260 - 264, fig 2), in rotational communication between the enlarged drive assembly housing and the drive shaft (page 10, lines 12 - 13) and having an outside diameter larger than the inside diameter of the drive tube; and
- d) a seal (230, 235, fig 2), contained within the enlarged drive assembly housing, configured to restrict contaminants from entering the enlarged drive assembly housing (page 9, last line - page 10, first line).

Independent Rejected Claim 40

A sealed bearing unit for a marine propulsion system (100 in fig 1, pg 2, lines 12-18), comprising:

- a) a casing (140, fig 1), configured for rotatably receiving a propeller shaft (130, fig 1) therethrough, wherein a lower end of the casing includes;

b) a bearing housing (200, fig 1), having a lower end;
c) a bearing (260 - 264, fig 2), in rotational communication between the bearing housing and the propeller shaft (page 10, lines 12 - 13); and
d) a seal (230, 235, fig 2), contained within the bearing housing, configured to restrict contaminants from entering the bearing housing (page 9, last line - page 10, first line).

Independent Rejected Claim 46

A sealed bearing unit for a marine propulsion system (100 in fig 1, pg 2, lines 12-18), comprising:

a) a casing (140, fig 1) having an inside, an outside and a lower end, configured for rotatably receiving a propeller shaft (130, fig 1) therethrough, wherein the lower end of the casing includes;
b) an enlarged bearing housing (200, fig 1) having an inside, an outside, an upper end and a lower end, wherein the inside diameter of the enlarged assembly housing is larger than the inside diameter of the casing;
c) a bearing (260 - 264, fig 2), in rotational communication between the enlarged bearing housing and the propeller shaft; and
d) a seal (230, 235, fig 2), contained within the enlarged bearing housing, configured to restrict contaminants from entering the enlarged bearing housing (page 9, last line - page 10, first line).

Exemplary Allowed Claim 73

A drive assembly for a marine mud motor (100 in fig 1, pg 2, lines 12-18), comprising:

- a) an elongate drive tube (140, fig 1) having an inside, an outside and a lower end, configured for rotatably receiving a drive shaft therethrough, wherein the lower end of the drive tube includes;
- b) an enlarged drive assembly housing (200, fig 1) having an inside, an outside, an upper end and a lower end, wherein the inside diameter of the enlarged assembly housing is larger than the inside diameter of the elongate drive tube;
- c) a bearing (260 - 264, fig 2), in rotational communication between the enlarged drive assembly housing and the drive shaft;
- d) a seal (230, 235, fig 2), contained within the enlarged drive assembly housing, configured to restrict contaminants from entering the enlarged drive assembly housing (page 9, last line - page 10, first line);
- e) a seal cap, coupled to the lower end of the enlarged drive assembly housing, configured for retaining the seal within the enlarged drive assembly housing; and
- f) at least one seal contained within the seal cap.

Exemplary Allowed Claim 74

A drive assembly for a marine mud motor (100 in fig 1, pg 2, lines 12-18), comprising:

- a) an elongate drive tube (140, fig 1), configured for rotatably receiving a drive shaft (130, fig 1) therethrough, wherein a lower end of the drive tube includes;
- b) a drive assembly housing (200, fig 1), having a lower end;
- c) a bearing (260 - 264, fig 2), in rotational communication between the drive assembly housing and the drive shaft; and
- d) a seal (230, 235, fig 2), contained within the drive assembly housing, configured

to restrict contaminants from entering the drive assembly housing (page 9, last line - page 10, first line); wherein the drive assembly housing further comprises an inside and the elongate drive tube has an outside, and wherein the inside of the drive assembly housing is coupled to the outside of the elongate drive tube.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether under 35 U.S.C. § 102(b) claims 40-42, 44-46, 48, 49, 51 and 52 are clearly anticipated by Lovell.

7. GROUPING OF CLAIMS

For the purposes of this appeal, with regard to issue A, the claims may be grouped, if the Board sees fit.

8. ARGUMENTS

I. REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

There are no outstanding rejections with basis in this section of the statutes.

II. REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

There are no outstanding rejections with basis in this section of the statutes.

III. REJECTIONS UNDER 35 U.S.C. § 102

35 U.S.C. §102(b)

Claims 40-42, 44-46, 48, 49, 51 and 52 stand rejected under 35 U.S.C. §102(b) as being clearly anticipated by Lovell. The Board will recognize that the Lovell patent does not illustrate nor teach the use of a bearing structure. Instead, Lovell illustrates a bushing. This bushing cannot, therefore, be in rotational communication between bearing housing and propeller shaft as recited in paragraph (C) of independent claims 40 and 46, but must instead slide therebetween. Furthermore, the Lovell construction will be unsuitable for application with mud motors, owing to the separate anchoring of outer housing 24 through strut 12. These features, and others found in these present claims, including the independent claims, are not taught or suggested by Lovell. The differences between bushings and bearings, and their history for mud motor applications, is discussed in the present specification between page 3, line 4 and page 5, line 7. The appellant therefore respectfully requests relief from the Examiner's final rejection by the Board of Appeals of the rejections based upon 35 U.S.C. §102(b).

The Board is further advised, as the Examiner has been throughout the long prosecution of the present application, that these claims were drafted by simply replacing each of the words or phrases in the allowed claims and claims found in the granted Foreman patent with terms from the present specification which are known by those in the art to be equivalent to those of the presently allowed claims. Several affidavits have been introduced of record in the present file, and are provided herein below in the "Evidence Appendix," establishing the identity of meaning between the claim recitations. Exemplary of this identity are rejected claim 46 and allowed claim 26.

For these aforesaid reasons, the appellant respectfully request relief from the Examiner's final rejection by the Board of Appeals of the rejections based upon 35 U.S.C. 102.

IV. REJECTIONS UNDER 35 U.S.C. § 103

There are no outstanding rejections with basis in this section of the statutes.

V. REJECTIONS FOR OTHER REASONS

There are no outstanding rejections with basis in this section of the statutes.

CONCLUSION

For the reasons outlined herein above, the Board of Appeals is requested to consider and reverse the rejections and decision to not institute an interference made by the Examiner. An appendix of all pending claims is attached.

Respectfully,



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CLAIMS APPENDIX

The claims, as they are at the time of appeal.

1 - 20 (canceled)

21. A drive assembly for a marine mud motor, comprising:

- a) an elongate drive tube, configured for rotatably receiving a drive shaft therethrough, wherein a lower end of the drive tube includes;
- 5 b) a drive assembly housing, having a lower end;
- c) a bearing, in rotational communication between the drive assembly housing and the drive shaft;
- d) a seal, contained within the drive assembly housing, configured to restrict contaminants from entering the drive assembly housing;
- 10 e) a seal cap, coupled to the lower end of the drive assembly housing, configured for retaining the seal within the drive assembly housing; and
- f) at least one seal contained within the seal cap.

Claim 22 (canceled)

23. A drive assembly as in claim 21, wherein:

- a) the lower end of the drive assembly housing has screw threads; and
- b) wherein the seal cap has screw threads, to allow the seal cap to be threadably connected to the lower end of the drive assembly housing.

Claim 24 (canceled)

25. A drive assembly as in claim 21, wherein the drive assembly housing and the drive tube are an integral unit.

26. A drive assembly for a marine mud motor, comprising:

- a) an elongate drive tube having an inside, an outside and a lower end, configured for rotatably receiving a drive shaft therethrough, wherein the lower end of the drive tube includes;
- b) an enlarged drive assembly housing having an inside, an outside, an upper end and a lower end, wherein the inside diameter of the enlarged assembly housing is larger than the inside diameter of the elongate drive tube;
- c) a bearing, in rotational communication between the enlarged drive assembly housing and the drive shaft and having an outside diameter larger than the inside diameter of the drive tube; and
- 10 d) a seal, contained within the enlarged drive assembly housing, configured to restrict contaminants from entering the enlarged drive assembly housing.

27. (canceled)

28. A drive assembly as in claim 26, further comprising a seal cap, coupled to the lower end of the enlarged drive assembly housing, configured for retaining the seal within the enlarged drive assembly housing.

29. A drive assembly as in claim 26, wherein:

- a) the lower end of the enlarged drive assembly housing has screw threads; and
- b) wherein the seal cap has screw threads, to allow the seal cap to be threadably coupled to the lower end of the enlarged drive assembly housing.

30. A drive assembly as in claim 28, wherein the seal cap includes at least one seal contained within the seal cap.

31. A drive assembly as in claim 26, wherein the enlarged drive assembly housing and the drive tube are an integral unit.

Claims 32 - 38 (canceled)

39. A drive assembly as in claim 26, wherein the inside of the enlarged drive assembly housing is coupled to the outside of the elongate drive tube.

40. A sealed bearing unit for a marine propulsion system, comprising:

- a) a casing, configured for rotatably receiving a propeller shaft therethrough, wherein a lower end of the casing includes;
- b) a bearing housing, having a lower end;
- c) a bearing, in rotational communication between the bearing housing and the propeller shaft; and
- d) a seal, contained within the bearing housing, configured to restrict contaminants from

entering the bearing housing.

41. A sealed bearing unit as in claim 40, further comprising a cover, coupled to the lower end of the bearing housing, configured for retaining the seal within the bearing housing.

42. A sealed bearing unit as in claim 41, wherein:

- a) the lower end of the bearing housing has screw threads; and
- b) wherein the cover has screw threads, to allow the cover to be threadably connected to the lower end of the bearing housing.

43. A sealed bearing unit as in claim 41, wherein the cover includes at least one seal contained within the cover.

44. A sealed bearing unit as in claim 40, wherein the bearing housing and the casing are an integral unit.

45. A sealed bearing unit as in claim 40, wherein the bearing housing further comprises an inside and the casing has an outside, and wherein the inside of the bearing housing is coupled to the outside of the casing.

46. A sealed bearing unit for a marine propulsion system, comprising:

- a) a casing having an inside, an outside and a lower end, configured for rotatably receiving a propeller shaft therethrough, wherein the lower end of the casing includes;

5 b) an enlarged bearing housing having an inside, an outside, an upper end and a lower end, wherein the inside diameter of the enlarged assembly housing is larger than the inside diameter of the casing;

c) a bearing, in rotational communication between the enlarged bearing housing and the propeller shaft; and

d) a seal, contained within the enlarged bearing housing, configured to restrict

10 contaminants from entering the enlarged bearing housing.

47. A sealed bearing unit as in claim 46, wherein the bearing includes an outside diameter larger than the inside diameter of the casing.

48. A sealed bearing unit as in claim 46, further comprising a cover, coupled to the lower end of the enlarged bearing housing, configured for retaining the seal within the enlarged bearing housing.

49. A sealed bearing unit as in claim 46, wherein:

a) the lower end of the enlarged bearing housing has screw threads; and

b) wherein the cover has screw threads, to allow the cover to be threadably coupled to the lower end of the enlarged bearing housing.

50. A sealed bearing unit as in claim 48, wherein the cover includes at least one seal contained within the cover.

51. A sealed bearing unit as in claim 47, wherein the inside of the enlarged bearing housing is coupled to the outside of the casing.

52. A sealed bearing unit as in claim 46, wherein the enlarged bearing housing and the casing are an integral unit.

Claims 53-72 (canceled)

73. A drive assembly for a marine mud motor, comprising:

a) an elongate drive tube having an inside, an outside and a lower end, configured for rotatably receiving a drive shaft therethrough, wherein the lower end of the drive tube includes;

b) an enlarged drive assembly housing having an inside, an outside, an upper end and a

5 lower end, wherein the inside diameter of the enlarged assembly housing is larger than the inside diameter of the elongate drive tube;

c) a bearing, in rotational communication between the enlarged drive assembly housing and the drive shaft;

d) a seal, contained within the enlarged drive assembly housing, configured to restrict

10 contaminants from entering the enlarged drive assembly housing;

e) a seal cap, coupled to the lower end of the enlarged drive assembly housing, configured for retaining the seal within the enlarged drive assembly housing; and

f) at least one seal contained within the seal cap.

74. A drive assembly for a marine mud motor, comprising:

- a) an elongate drive tube, configured for rotatably receiving a drive shaft therethrough, wherein a lower end of the drive tube includes;
- b) a drive assembly housing, having a lower end;
- c) a bearing, in rotational communication between the drive assembly housing and the drive shaft; and
- d) a seal, contained within the drive assembly housing, configured to restrict contaminants from entering the drive assembly housing;

wherein the drive assembly housing further comprises an inside and the elongate drive tube has an outside, and wherein the inside of the drive assembly housing is coupled to the outside of the elongate drive tube.

EVIDENCE APPENDIX

1. Declaration of Richard L. Fisher dated November 14, 2002 and submitted the same date.
2. Declaration of Mark L. Fisher dated November 14, 2002 and submitted the same date.
3. Declaration of Richard L. Fisher dated March 22, 2004 and submitted the same date.
4. Declaration of Brian Bell dated March 3, 2004 and submitted March 22, 2004.
5. Declaration of Rock Crawford dated February 25, 2004 and submitted March 22, 2004.